Completed Return on Investment Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

Reduction of Photochemical Waste

Los Alamos National Laboratory

Original Problem

Two large machines for processing film and creating negatives and positives took up a lot of lab space, and the procedures generated about 3000kg of hazardous photochemical waste every year. About 40 hours per month were spent mixing chemicals and cleaning the units.

The Project Solution

The two large units were replaced with one smaller unit that performs all of the same functions but requires less water and produces about 80% less hazardous waste.

Value of Improvement

Replacing the two large units with the small unit yielded several benefits in addition to reduced hazardous waste generation. Less than three hours per month are necessary for mixing chemicals and cleaning the new unit. The chemicals for the new unit arrive in a kit, minimizing the time required for mixing and reducing the potential for splashing and exposing the employees. Since much less hazardous waste is generated, the waste only needs to be collected once every other year. The team members have found that the film processing quality from the new unit is even better than that from the old machines.

Lifecycle Waste Reduction	
Lifecycle Waste Reduction	3000kg / year
Commencement Date	1999
Project Useful Life (Years)	10

DOE Monetary Benefits	
Total Project Cost	$33,000
Lifecycle Savings	$30,000 / year
Return on Investment	22.5%

Benefits At-A-Glance

- The new unit produces 80% less hazardous photochemical waste than the two old film processing machines.
- The new unit uses 240,000 gallons less water each year than the old machines.
- Mixing chemicals for and cleaning the new unit require much less time.

Reduction of Photochemical Waste
Los Alamos National Laboratory

Summary Data	
Priority Area:	Waste Minimization Projects
Project Type:	Source Reduction
Total Project Cost:	$33,000
Lifecycle Savings:	~$30,000 per year
Implementing Group:	CIC-9
Benefiting Group:	CIC-9
Useful Life Years:	10
Return on Investment:	22.5%
Lifecycle Waste Reduction:	~3000kg hazardous photochemical waste / year, ~240,000 gallons of water / year
Project Contact:	Presley Salaz
Phone:	(505)667-4064
Email:	presley.salaz@lanl.gov